INSTALLATION INSTRUCTIONS

MODEL PA435X
FOUR CHANNEL POWER AMPLIFIER

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SAFETY INSTRUCTIONS - READ BEFORE OPERATING EQUIPMENT

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions, which you should be particularly aware of.

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization** – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
12. **Power-Cord Protection** – Power- supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** – An outdoor antenna should be located away from the power lines.
15. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
    A. The Power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.
18. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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GENERAL INFORMATION

To enhance the ease of installation and obtain optimum performance from the PA435X, we recommend that you first become familiar with all its features and special capabilities by studying the descriptions and instructions in this manual.

The PA435X was designed to meet the audio power amplifier needs of custom installed multi-zoned systems with high sonic quality. It is a 4 Channel amplifier that is primarily intended to interface with the MRC88 **W**hole-house **A**udio **V**ideo **E**ntertainment System for Zones 7 and 8 Preamp outputs or for Sub-Zone amplification of zones 1-6. It may also be used as a standalone single or 2-zone amplifier. Specific features and technology are as follows:

Figure 1: The Model PA435X Amplifier

Cost/Size Efficiency. The PA435X features four 35-watt power amplifiers. This permits each PA435X to drive 2-zones in a multi-zone system -- each with a 35-watt stereo amplifier per zone.

4-3-2 Output Flexibility. Either pair of amplifiers can be bridged to allow several channel and power output capabilities. It can be configured into three power packages as follows:

- Four 35-watt amplifiers. (4 Mono speaker outputs or 2 Stereo Zone outputs)
- One 70 and two 35-watt amplifiers. (1 Mono 70 Watt and 1 Stereo 35-watt output)
- Two 70-watt amplifiers (single Zone Stereo 70-watt output)

Remote ON/OFF Control Jacks (C1 & C2). These 3.5mm Stereo Mini Jacks allow the PA435X to be powered on and off and muted by a positive DC voltage ranging between 4 and 30 volts (11mA @ 12 V). Specifically, when interfaced with the Control Out jacks of zones 7 & 8 on the MRC88 (labeled CO1 and CO2), it permits the MRC88 to power the PA435X ON and OFF automatically with zone ON/OFF commands.

Input Level Flexibility. The input levels are individually adjustable (per stereo pair) from a low of 0.2 volts up to 3 volts. This gives the installer the ability to adjust the overall gain of the system or zone. For instance, there may be a need to adjust the amplifier to deliver a controlled, maximum sound level into a zone when the volume control on the preamp is set to maximum. This would act as a volume limiter for any particular zone (i.e. to prevent the kids from over-driving wall speakers, etc.). When set to the 1:30 position, this will match the sensitivity level of the standard Amplifier output setting of the MRC88.

Low Impedance Capability. Each amplifier is 4-Ohm safe under music conditions in stereo mode and 8-Ohm safe when bridged. This means, for instance, that you can drive two pairs of 8-Ohm speakers in stereo mode in each zone with ease.

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Peak/Clip LED Indication: Whenever either amplifier channel output starts to enter a clipping state, a front panel LED will illuminate RED. After the amp stops clipping the LED will return to its normal state 5-6 seconds after clipping stops.

Auto Protection Circuit. This feature protects the PA435X if a short or very low impedance is detected at the speaker terminals with each amplifier pair protected separately. Normal operation is restored automatically within 3 to 4 seconds after the short is removed.

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PA435X PANEL AND FEATURE DESCRIPTIONS

1. **Front Panel**. 17" X 3.5" panel designed for shelf mounting. The unit measures 4" high with the Feet (Item #5). When rack mounting use an adequate rack shelf mount making sure to allow for proper ventilation.

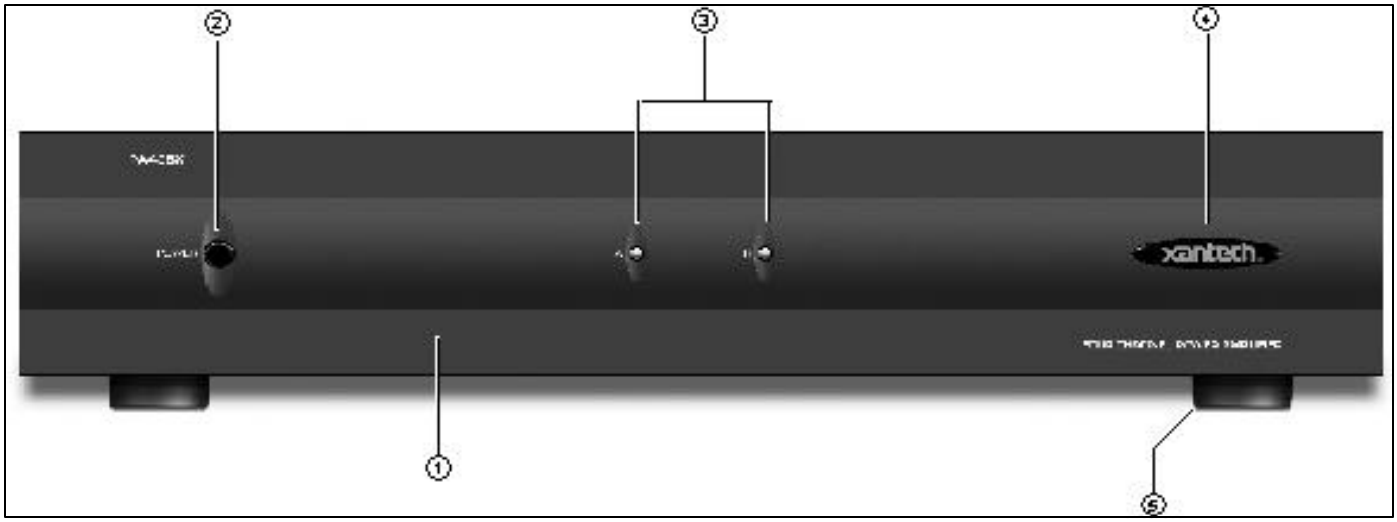

FIGURE 2 – THE MODEL PA625X FRONT PANEL – FEATURES AND FUNCTIONS

2. **POWER/STANBY SWITCH:**
   - **STANDBY MODE:** When the front switch is pressed to the IN position, the PA435X may be controlled remotely from the MRC88 leaving the amplifier in STANDBY MODE when any of the Zones are powered OFF via the CI1 and CI2 Control Inputs.
   - **POWER ON/OFF MODE:** When the front switch is the OUT position the amplifier may be totally controlled via the MRC88; turning the amp ON when either Zone of the MRC88 is powered up and powering the amp OFF when both Zones are OFF via the CI1 and CI2 Control Inputs.

   NOTE: The rear power switch (Item #15) needs to be in the ON (I) position for both modes of operation

3. **Status LED Indicators**. These indicators, one for each channel pair, provide the following status information:

   - **GREEN LED:** Indicates Amplifier is ON
   - **RED LED:** Indicates associated channel output is in a CLIPPING state. LED will go back to GREEN 5-6 seconds after clipping subsides.
   - **ALL LED's OFF:** Indicates both amplifier channels are OFF or in STANBY MODE (see Item #4 for STANDBY MODE)

4. **Illuminated LOGO:** This is a backlit logo. When lit it indicates that the amplifier is powered ON. If the individual STATUS LED's (Item #3) are OFF but the LOGO is ON. This indicates that both amplifier channels are currently in STANDBY MODE. Whenever the LOGO is not illuminated, this indicates the amplifier is powered OFF.

5. **Feet:** Provides required ½" spacing when unit is shelf mounted to allow for proper ventilation. These feet should not be removed. (see the section entitled MOUNTING for further information)

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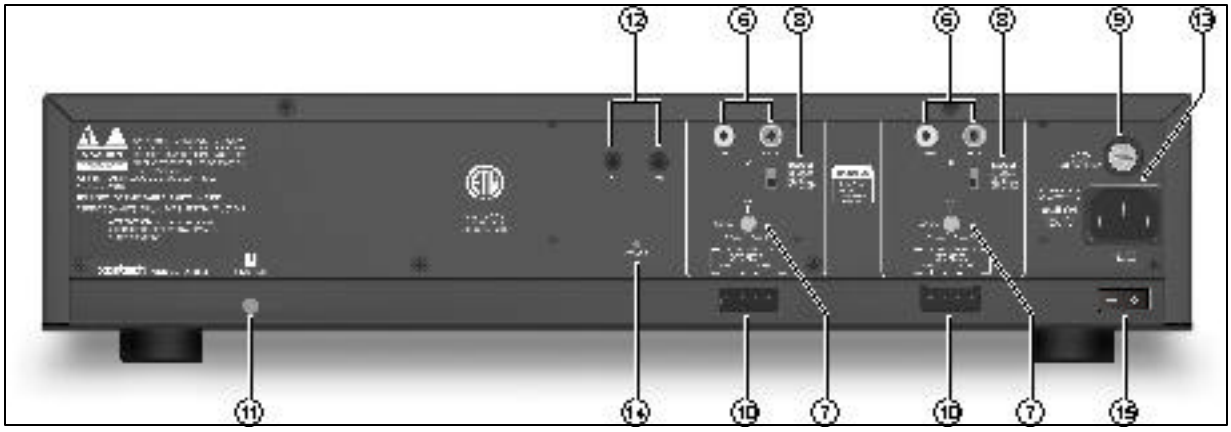

FIGURE 3 – PA435X REAR PANEL - FEATURES AND FUNCTIONS

6. **Line Inputs**. These RCA-type jacks are the audio inputs for each of the amplifier pairs. Connect them to the Preamp Output jacks of Zone 7 & 8 of the MRC88 (or other driving preamp output) with good quality RCA-type patch cables. Note that the inputs are marked LEFT-A-RIGHT, LEFT-B-RIGHT signifying the stereo channel pairs. Both the LEFT and RIGHT jacks are always active even when the MODE switch (item #8) is set to the MONO or BRIDGED mode.

7. **Input LEVEL Control**. This screwdriver adjustable control (for each stereo or bridged pair) allows the input level for full rated power output to be adjusted over a range of 0.2 volts to 3 volts (24.3 dB). Normally you would adjust the driving preamp to maximum volume, then set this control to the maximum volume that the client desires for a given zone or room. This prevents the system from being driven to unwanted power levels.

   NOTE: To set the Input Level Control for matched output to the MRC88 Speaker output, set the Input Level Control on both pairs to the .7v (1:30) position as shown in **Figure 4** below.

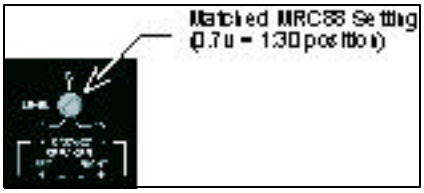

Figure 4: PA435X Level Adjustment setting when used with MRC88

8. **MODE Switch**. Switches the amplifier pair between **STEREO**, **MONO** and **BRIDGED** modes.

   a. In **STEREO** mode, the two amplifiers operate independently of each other for 35 Watts of output each.

   b. In **MONO** mode, left and right input signals are summed internally for Mono output from each of the two amplifiers. When interfacing a mono audio source, either the Left or Right (item #6) inputs may be used.

   c. In **BRIDGED** mode, the two amplifiers are bridged for a single channel of high power output (70 Watts @ 8 Ohms). Either the Left or Right input (item #6) may be used to drive the resultant single channel amplifier.

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CAUTION: Be sure to have the rear AC LINE POWER switch (Item #15) turned OFF (O) when changing the position of this switch and when making the corresponding speaker connection changes.

9. FUSE. When required, replace only with a fuse of the same type and rating:

- 120 V Version: 6.25 AMP 250 VAC, SLOW BLOW.
- 240 V Version: 3.15 A Time-Lag 250 VAC.

NOTE: Replacement with a fuse of higher rating will not protect the amplifier and will void the warranty.

10. SPEAKER Terminals. These plug-in 4-terminal screw type connectors permit speaker wire sizes up to 12 gauge. When making connections for the STEREO mode, be sure to observe the "+" and "–" polarity markings, just under the LEFT & RIGHT markings, for each wire pair going to the speakers.

CAUTION: When making connections for the BRIDGED mode, remember, only one speaker is being attached per amplifier pair. Be sure to observe the outer "+" and "–" polarity markings on each side of the word "BRIDGED" on the panel above the 4-terminal connector when connecting the 2-conductor wire to the speaker.

11. Grounding Screw. Provides a means for chassis connection to earth ground or to other A/V products to aid in the reduction of system noise, etc., where needed.

12. REMOTE MASTER ON/OFF and MUTE CONTROL (CI1 & CI2). These two Stereo Mini Jack connections allow each individual channel pair of the PA435X to be powered ON and OFF and muted by a control voltage ranging between 5 and 30 Volts DC (16mA @ 12 V). When connected to the C01 and C02 jacks from Zones 7 & 8 on the Xantech MRC88, this will allow remote Power ON/OFF control directly from the MRC88 System Controller. This allows the 'A' & 'B' amplifier channel pairs to be individually controlled by Zone 7 & 8 of the MRC88. (Tip = ON/OFF Standby Control; Ring = Mute Control; Sleeve = gnd).

NOTE: The front panel POWER switch (item #3) must be left in the Manual OFF (Out) position and the Master AC Line Switch (item #13) set to ON (I) to permit the REMOTE MASTER ON/OFF CONTROL to operate. See also CAUTION notes, Fig. 9.

13. 3-Conductor AC Line Cord Receptacle. Standard IEC male receptacle for plug-in of a 3-conductor power line cord. Depending on the application, plug the line cord into a switched or un-switched 120V 60 Hz AC outlet (or 240 VAC 50 Hz on the 240 V version).

14. Rear Panel ON/OFF LED. This LED indicates the power ON/OFF condition of the entire PA435X, whether activated by a REMOTE MASTER ON/OFF CONTROL (item #11) or from the rear panel AC Line Power switch (item # 15).

15. Master AC LINE ON/OFF Switch. Turns power OFF to the entire PA435X, regardless of front panel POWER switch conditions. Must be placed in the ON (I) position for the other power switching functions to work.

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INSTALLATION - PHYSICAL LOCATION AND MOUNTING

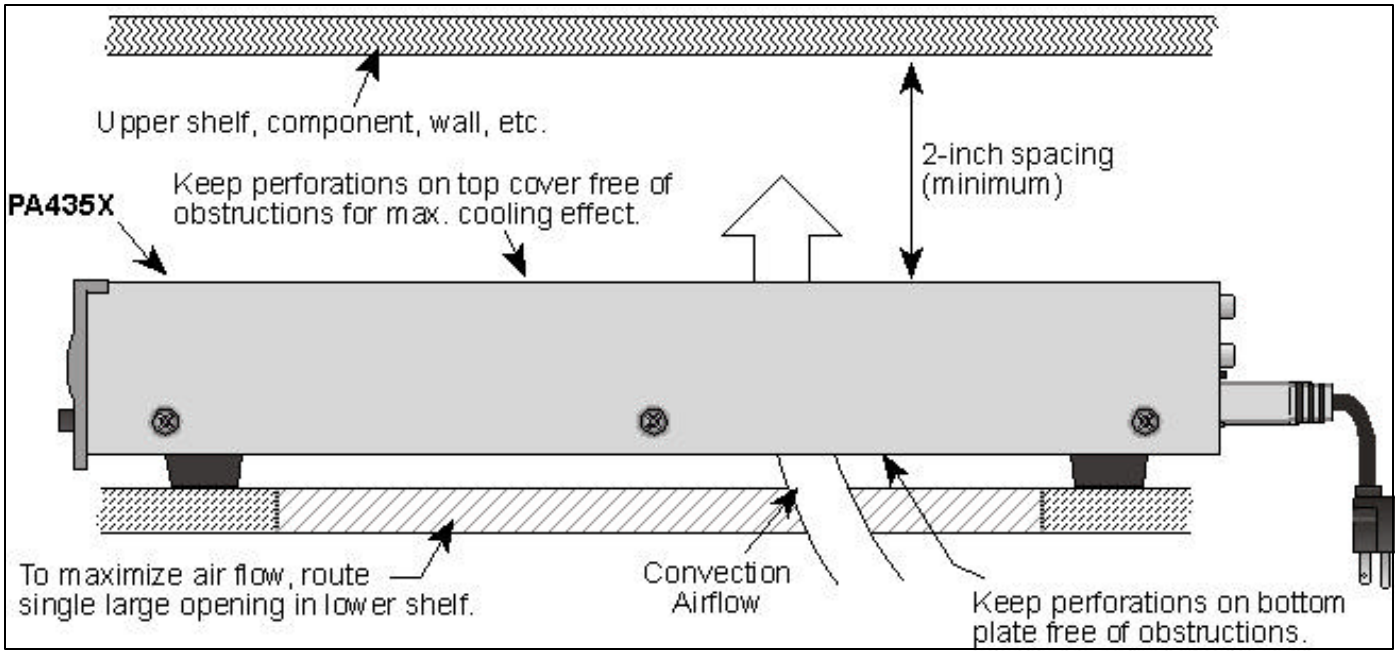

Figure 5 – HORIZONTAL MOUNTING

When you mount the PA435X, you should plan its location carefully. Pay close attention to each of the following factors:

1. The amplifier is convection cooled. That is, it depends on the natural free flow of air up through the slot perforations in the bottom plate, over the internal heat dissipating fins, then out the top cover, for adequate cooling.

2. If mounted in an equipment cabinet or other confining location, allow at least 2 inches of space above the top cover (see Fig. 4). Be sure there are large openings in the shelf below the unit and in the cabinet to allow the entry of cool air and the escape of warm air.

   NOTE: Do not remove feet in shelf-top installations.

3. If the cabinet contains other heat generating components, you will have to pay even closer attention to adequate ventilation.

4. Do not hesitate to use fans (quiet, boxer type), if necessary, to ensure a constant flow of air through the PA435X's and the other heat generating components.

5. When mounting in a 19" (483mm) rack, adding a single RU (Rack Unit) above and below the PA435X will improve convection in heavy use applications.
   [One Rack Unit size = 1-3/4" (44.5mm) in height].

6. In multi-zone installations, you will have large bundles of wire and cable to accommodate audio, video and speaker connections. Be sure to allow enough strain relief for the leads and dress them in such a manner so as not to block airflow.

7. The PA435X is designed for shelf mounting on flat horizontal surfaces. When mounting into a 19" rack, use an appropriate rack kit.

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NOTE: You should consider some sort of rear support for rack mounted units when used in mobile applications or when located in seismically-active areas.

CONNECTING THE PA435X

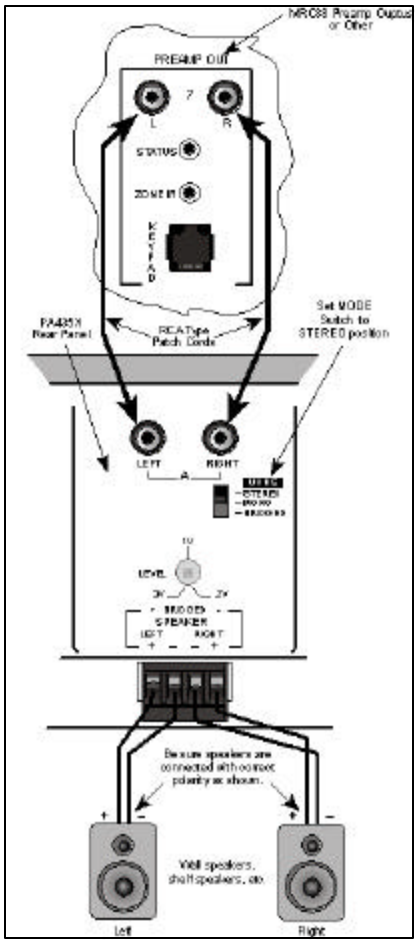

Figure 6 - PA435X Stereo Mode Connections

When making connections to the PA435X be sure the power cord is unplugged. Proceed as follows:

Stereo Mode Connections

1. Using good quality RCA-type patch cables connect the L and R OUTPUT jacks of the MRC88 Pre Amp Output or other driving preamp to the LEFT and RIGHT input jacks on the PA435X. Do this for each amplifier pair. Refer to Fig. 6.

2. Slide the MODE switch to the **STEREO** position.

3. Using good quality speaker wire, connect the individual speaker leads to the 4-terminal "SPEAKER" connectors on the PA435X as shown.

4. The PA435X is 4-Ohm safe in Stereo Mode. Make sure the impedance presented to the speaker terminals by the speakers (or any combination of speakers) is 4-Ohms minimum.

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5. Be sure to observe correct polarity by connecting the "+" and "–" terminal from each channel on the PA435X to the corresponding "+" and "–" terminals on each speaker. This will ensure correct "phasing" - see Fig. 6 and Speaker Phasing below. Since the connectors are removable, you may unplug them for ease of lead assembly.

6. As a rule of thumb, use 18 gauge speaker wire for speaker runs up to 30' (9m), 16 gauge up to 70' (21m), and 14 gauge up to 150' (39m). The 4-terminal connectors accept wire sizes up to 12-gauge max.

7. Strip the insulation back about 1/4" (6mm) and twist the strands on each lead to prevent fraying.

CAUTION: After lead ends are inserted and the screws tightened down, be sure there are no free strands that could cause shorting!

Speaker Phasing

To obtain stable imaging and full bass response, it is imperative that stereo speakers be connected "in phase" with each other. You can verify this as follows:

a) If the "+" (positive) and "–" (negative) terminals on your speakers are correctly marked, and visible, and you have wired the system as shown in Figs. 5 and 6, then the system will be "in phase". No further action is required. Most manufacturers identify the positive terminal with a red binding post, a "+" sign, or a red dot.

b) If you are unsure of the markings, you can verify the phasing. Using a mono sound source, such as AM radio, alternately reverse the leads to one of the speakers. Pick the connection that delivers a solid center image between the speakers as well as best bass response.

Mono Mode Connections

1. Using good quality RCA-type patch cables connect mono output jack of the driving preamp to the LEFT or RIGHT input jack on the desired channel of the PA435X. Both the LEFT and RIGHT input jacks of the PA435X are active in Mono Mode. If both jacks are utilized simultaneously, the signals placed on the input terminals are 'summed' together.

2. Slide the MODE switch to the **MONO** position.

3. Using good quality speaker wire, connect the individual speaker leads to the 4-terminal "SPEAKER" connectors on the PA435. Both the LEFT and RIGHT Speaker outputs will be active with the identical program output

4. The PA435X is 4-Ohm safe in Mono Mode. Make sure the impedance presented to the speaker terminals by the speakers (or any combination of speakers) is 4-Ohms minimum.

5. Be sure to observe correct polarity by connecting the "+" and "–" terminal from each channel on the PA435X to the corresponding "+" and "–" terminals on each speaker. This will ensure correct "phasing" - see Fig. 6 and Speaker Phasing below. Since the connectors are removable, you may unplug them for ease of lead assembly.

6. As a rule of thumb, use 18 gauge speaker wire for speaker runs up to 30' (9m), 16 gauge up to 70' (21m), and 14 gauge up to 150' (39m). The 4-terminal connectors accept wire sizes up to 12-gauge max.

7. Strip the insulation back about 1/4" (6mm) and twist the strands on each lead to prevent fraying.

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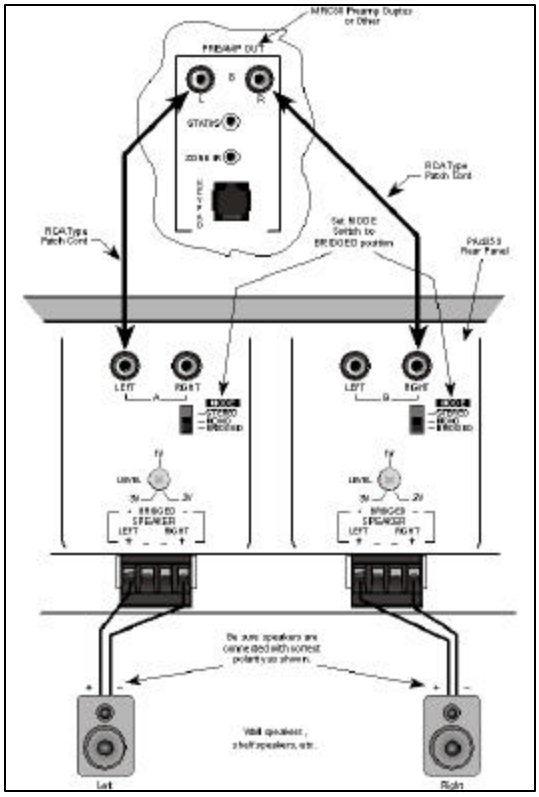

Figure 7 – Bridged Mode Connections

Bridged Mode Connections

In general, it is recommended that the BRIDGED mode not be used in multi-room applications where several speakers are driven through room volume controls and the like.

For such applications, use the STEREO mode. Use the BRIDGED mode for single speaker, higher power applications, such as in surround sound systems. Use speakers with an impedance rating of 8-Ohms minimum.

To make connections for the BRIDGED mode, follow the steps given before for stereo connections, but with the following differences:

1. You may connect the RCA-type patch cables from the OUTPUT jacks of the driving preamp or other source to either the LEFT or the RIGHT input jacks of the bridged pair, as shown in Fig. 6. Do this for just the amplifier pairs you wish to run in the bridged mode.

   CAUTION: Be sure **Power is OFF** when connecting or switching the amp into or out of BRIDGED operation.

2. Slide the MODE switch to the **BRIDGED** position.

   NOTE: Do this only on the amplifier pairs you wish to run in the bridged mode!

3. Connect one speaker wire pair between the 4-terminal "SPEAKER" connectors on the PA435X and the speakers as shown in Fig. 6. Be sure to use only the two outer terminals marked "+" and "–" on the 4-terminal connector as shown on the panel for BRIDGED connections.

   NOTE: Only *one speaker* is connected per amplifier pair in the BRIDGED mode!

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CAUTION: When operating in the BRIDGED mode (particularly when bench testing the amplifier) do not make a ground or any other kind of connection to the amplifier speaker terminals other than those to the individual speakers as shown. Failures caused by inappropriate connections are not covered under the warranty.

Connecting the REMOTE MASTER ON/OFF MUTE CONTROL

As mentioned under "PA435X PANEL AND FEATURE DESCRIPTIONS", the REMOTE MASTER ON/OFF CONTROL inputs (CI1 & CI2) will allow the power to the PA435X to be turned ON, OFF, and MUTED by remotely applied DC Voltages. Fig. 8 illustrates how a PA435X can be switched ON and OFF via the MRC88 Zone 7 & 8 Control Outputs (CO1 and CO2).

On/Off Standby Control:

Whenever a 5 to 30v dc voltage is applied to the TIP of the 3.5mm Stereo jack, the associated Amplifier channel will be activated (Powered ON). When the signal applied to the TIP approaches GND it will put the associated Amplifier channel in STANDBY Mode. If both Amplifier channels are in STANDBY MODE and the front POWER SWITCH left in the OUT position, the entire Amplifier will be powered down (Illuminated LOGO OFF).

Mute Control:

Whenever a 5 to 30v dc voltage is applied to the RING of the 3.5mm Stereo jack, the associated Amplifier channels signal output will be MUTED. When the signal applied to the RING approaches GND it will UN-MUTE the associated Amplifier channel and the audio signal will be returned to its previous level.

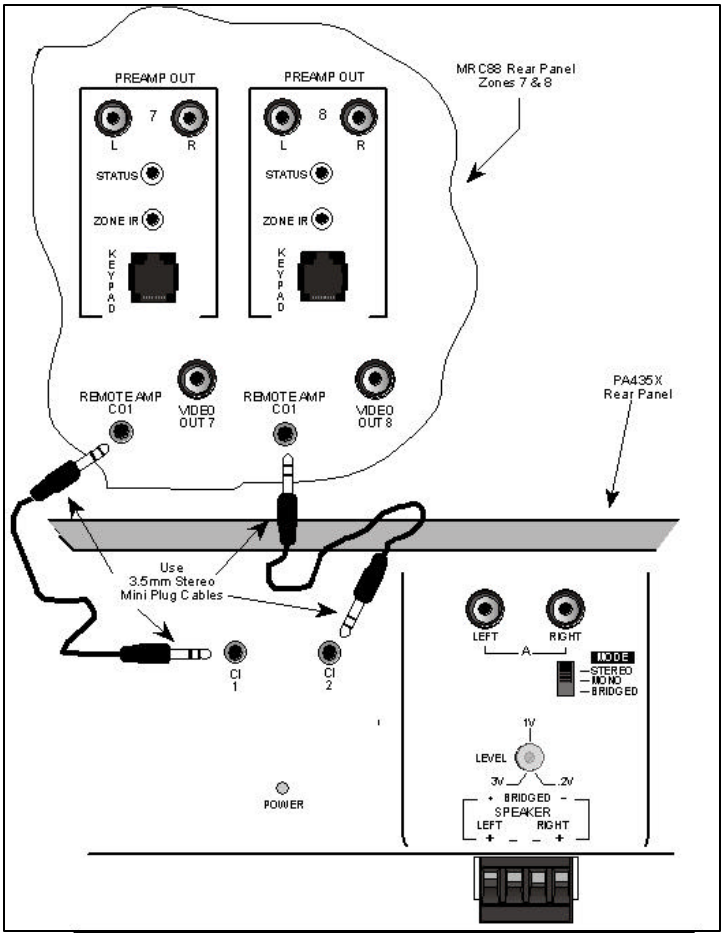

Figure 8: Using the PA435X REMOTE MASTER ON/OFF CONTROL Terminals

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A Multi-Zone System Diagram Using The PA435X and MRC88

Fig. 9, following, shows the PA435X in a typical multi-room system with a Xantech MRC88 eight-zone preamp.

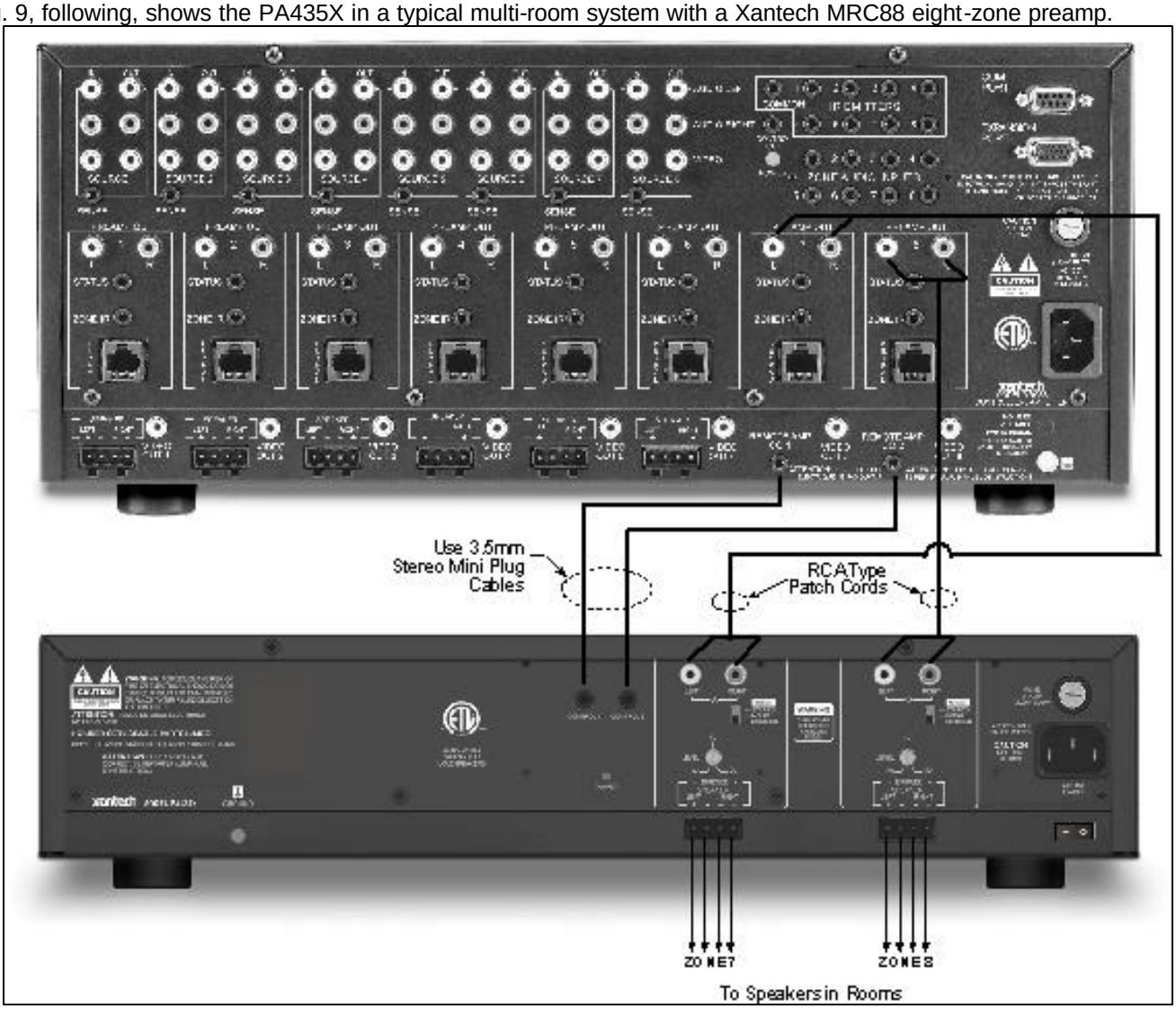

Figure 9: Interfacing the PA435X with an MRC88 Zones 7 & 8

In this case:

1. Using good quality RCA Stereo Patch Cords, connect the **Preamp Outputs** of **Zone 7** on the MRC88 to the **Left and Right Audio Inputs** labeled **'A'** on the rear of the PA435X.
2. Similar to step 1, connect the **Preamp Outputs** of **Zone** 8 on the MRC88 to the **Left and Right Audio Inputs** labeled **'B'** on the rear of the PA435X.
3. Using two 3.5mm **Stereo** Mini Plug cables, connect the **Remote Amp CO1** jack on the rear of the MRC88 to the **CI1** jack on the rear of the PA435X
4. Similar to step 3, connect the **Remote Amp CO2** jack on the rear of the MRC88 to the **CI2** jack on the rear of the PA435X.
5. Set the Input Level Adjustment for both channels on the rear of the PA435X according to **Figure 4**. This will match the output of the PA435X to the standard output of the other 6 Zones of the MRC88. You can also adjust higher or lower according to customer preference.

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The **Remote Amp CO1 & CO2** (Remote Control Jack) from the MRC88 allows for individual Zone control directly from the Zone 7 & 8 keypads of the MRC88 system. When any one of the zones is turned on, the PA435X is powered ON. Similarly, when either Zone is powered down, the associated amplifier pair on the PA435X is put into STANDBY Mode. When both Zones (& & *) are powered down, the PA435X will either go into STANDBY Mode on both amplifier pairs or will be POWERED OFF depending upon the position of the front panel POWER/STANDBY button (IN = STANDBY; OUT = ON/OFF).

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TROUBLE SHOOTING

If you encounter a problem, please review the items in the following list. Be sure, in addition, to check other system components, such as preamplifiers, CD players, speakers, speaker wiring, etc., that may be at fault.

PROBLEM	PROBABLE CAUSE AND SOLUTION
Rear panel Power Indicator does not light – no sound.	Check line cord for good contact in a live AC outlet. If REMOTE CI jacks are being used, be sure applied voltage is between +5V and +30V DC with proper polarity. See Fig. 8.
No sound from CH2, CH4 when stereo operation is desired.	BRIDGED/STEREO switch is incorrectly set to BRIDGED position. Set to STEREO position. See Fig. 6.
Sound cuts in and out every 3 to 5 seconds.	Speaker load impedance is less than 4-Ohms for Stereo mode or less than 8-Ohms for Bridged mode. Make changes in speakers as necessary to obtain higher impedance.
PA435X does not turn OFF when both REMOTE input voltages go to 0 Volts. The Logo stays illuminated.	Be sure that the Front Panel POWER switch (item 2, Fig. 2) is set to the REMOTE ON/OFF (OUT) position.
PA435X becomes very warm, shuts OFF, but does not come back ON automatically.	Set POWER switch (item 3, Fig. 2) to MANUAL OFF (OUT) position for 15 seconds, then back ON. If REMOTE ON/OFF jack is used, unplug for 15 seconds, then re-plug.
One or more front panel LED's glow red.	The amplifier has been driven into clipping and/or is overheating. Correct faulty condition.

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SPECIFICATIONS

Number of channels	4
Power Output Rated continuous power, each channel, all six channels simultaneously driven, 20 Hz to 20kHz, at rated THD	35 Watts at 8 Ohms
Power Output Short term continuous, each channel, 2 channels driven, 1 kHz, at rated THD	55 Watts at 8 Ohms 80 Watts at 4 Ohms
Bridged Power Output Short term continuous, one pair driven at 1 kHz, at rated THD	150 Watts at 8 Ohms
Rated THD	< 0.08%
Damping Factor at 50 Hz, half rated power	> 100
S/N Ratio A-weighted, shorted inputs, ref to rated power	> 100 dB
Frequency Response at 1 Watt, ± 3dB	12 Hz to 55 kHz
Input Sensitivity at rated power, stereo mode, input gain	Max: 0.2 V Default: 1.0 V Minimum: 3V
Input Impedance	Local Inputs: 22 kOhms Common Audio Buss Inputs: 70kOhms
Power Source	120 VAC, 60 Hz TMRA 35° Celsius (95° F). If this temperature is exceeded, you will need to provide additional ventilation to ensure proper operation. 240 VAC, 50 Hz (European version)
Power Consumption	No signal: 14 Watts 4 Channels at 1/10 rated power: 105 Watts 4 Channels at rated power: 420 Watts 4 Channels Bridged at 465 Watts
Remote On/Off/Mute CI1 & CI2 Voltage/Current	+5 V to +30 VDC (16 mA at +12 VDC)
Line Fuse Rating	120V version: 6.25A Slow Blow 250 VAC 240V version: 3.15A Time-Lag 250 VAC
Dimensions	17” W x 4” H x 11.5” D (432 mm W x 102 mm H x 293 mm D)
Weight	20.4 lbs (9.3 Kg)

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